AMENDMENTS TO THE SPECIFICATION

In the specification at page 1, after the title and the paragraph entitled "RELATED APPLICATIONS" as well as the paragraph directing entry of the Sequence Listing submission added in the Preliminary Amendment dated February 1, 2006, please insert the following heading:

FIELD OF THE INVENTION

In the specification at page 1, after line 35 but before line 36, please insert the following heading:

DESCRIPTION OF RELATED ART

In the specification at page 6, after line 30 but before line 31, please insert the following paragraphs:

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows various synthetic pathways for the biosynthesis of DHA (docosahexaenoic acid).

Figure 2 shows substrate specificity of the Δ5-elongase (SEQ ID NO: 53) for various fatty acids.

Figure 3 shows reconstitution of DHA biosynthesis in yeast starting from 20:5ω3.

Figure 4 shows reconstitution of DHA biosynthesis in yeast starting from 18:4ω3.

Figure 5 shows fatty acid composition (in mol %) of transgenic yeasts which had been transformed with the vectors pYes3-OmELO3/pYes2-EgD4 or pYes3-OmELO3/pYes2-EgD4+pESCLeu-PtD5.

Figure 6 shows feeding experiment for determining the functionality and substrate specificity with yeast strains.

Figure 7 shows elongation of eicosapentaenoic acid by OtElo1.

Figure 8 shows elongation of arachidonic acid by OtElo1.

Figure 9 shows expression of TpELO1 in yeast.

Figure 10 shows expression of TpELO3 in yeast.

Figure 11 shows expression of Thraustochytrium Δ5-elongase TL16/pYES2.1 in yeast.

Figure 12 shows desaturation of linoleic acid (18:2ω6-fatty acid) to give α-linolenic acid (18:3 ω3-fatty acid) by Pi-omega3Des.

Figure 13 shows desaturation of γ-linolenic acid (18:3 ω6-fatty acid) to give stearidonic acid (18:4 ω3-fatty acid) by Pi-omega3Des.

Figure 14 shows desaturation of C20:2 ω6-fatty acid to give C20:3 ω3-fatty acid by Pi-omega3Des.

Figure 15 shows desaturation of C20:3 ω6-fatty acid to give C20:4 ω3-fatty acid by Pi-omega3Des.

Figure 16 shows desaturation of arachidonic acid (C20:4 ω6-fatty acid) to give eicosapentaenoic acid (C20:5 ω3-fatty acid) by Pi-omega3Des.

Figure 17 shows desaturation of docosatetraenoic acid (C22:4 ω6-fatty acid) to give docosapentaenoic acid (C22:5 ω3-fatty acid) by Pi-omega3Des.

Figure 18 shows substrate specificity of Pi-omega3Des for various fatty acids.

Figure 19 shows desaturation of phospholipid-bound arachidonic acid to EPA by Pi-Omega3Des.

Figure 20 shows conversion by OtDes6.1 of linoleic acid (arrow) into γ-linolenic acid (γ-18:3).

Figure 21 shows conversion of linoleic acid and α-linolenic acid (A and C) and reconstitution of the ARA and EPA synthetic pathways, respectively, in yeast (B and D) in the presence of OtD6.1.

Figure 22 shows expression of ELO(XI) in yeast.

Figure 23 shows the substrate specificity of ELO (Ci) after expression and after feeding various fatty acids.

Figure 24 shows elongation of eicosapentaenoic acid by OtElo1 (B) and OtElo1.2 (D), respectively. The controls (A, C) do not show the elongation product (22:5ω3).

Figure 25 shows elongation of arachidonic acid by OtElo1 (B) and OtElo1.2 (D), respectively. The controls (A, C) do not show the elongation product (22:4ω6).

Figure 26 shows elongation of 20:5n-3 by the elongases At3g06470.

Figure 27 shows substrate specificity of the Xenopus Elongase (A), the Ciona Elongase (B) and the Oncorhynchus Elongase (C).

Figure 28 shows substrate specificity of the Ostreococcus Δ5-elongase (A), the Ostreococcus Δ6-elongase (B), the Thalassiosira Δ5-elongase (C) and Thalassiosira Ostreococcus Δ6-elongase (D).

Figure 29 shows expression of the Phaeodactylum tricornutum Δ6-elongase (PtELO6) in yeast. A) shows the elongation of the C18:3$^{\Delta 6,9,12}$-fatty acid and B) the elongation of the C18:4$^{\Delta 6,9,12,15}$-fatty acid.

Figure 30 shows the substrate specificity of PtELO6 with regard to the substrates fed.

DETAILED DESCRIPTION OF THE INVENTION